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A CAHNERS PUBLICATION

DATAMATION

FOR CORPORATE COMPUTING PROFESSIONALS WORLDWIDE

Andy K. Ludwick (right), president, Kevin Woods, product marketing manager, SynOptics Communications Inc., with the LattisSwitch System 3000

JULY 1, 1992

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Europe's IT Sales Plummet 17% To $35B

"Things are going so fast, so fast," laments Groupe Bull CEO Francis Lorentz. In Europe in 1991, the changes were fast, the cuts deep and the industry shocked.

At the beginning of 1991, Europe's information technology companies were coming off of a dismal year and bracing for more of the same. What they got was something far worse.

"It was a shocking year," says Amit Chaudhuri, an analyst at the market research firm International Data Corp. in London. "For the first time in the industry, revenue growth just stopped. The big suppliers hit a brick wall."

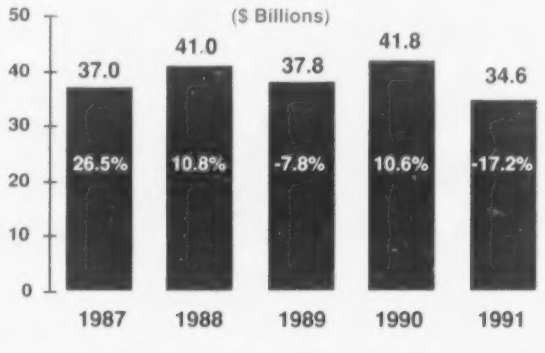
And the brick wall crumbled. The largest European IT suppliers—those in the DATAMATION European 25—collectively saw revenue drop 17.2% from year to year, down $7.2 billion to $34.6 billion. Three key factors contributed to this decline. Last year's acquisition spree means that some companies formerly on this list no longer appear, as their revenue has been consolidated into that of their purchasers. The list itself, according to figures from IDC, reflects about one-third of the entire European information technology industry. And, finally, 1990's weak dollar had artificially inflated last year's revenue growth.

Still, the effect of this economic disaster on Europe's IT firms is difficult to overstate. Francis Lorentz, chairman and chief executive officer of Groupe Bull SA, was typical of his European colleagues in that he was utterly blindsided by the severity of last year's recession. He had expected the European IT market to grow in the neighborhood of 10%, he says—a far cry from the heady days of the 1980s, but wildly optimistic in retrospect. Last year the whole European IT industry grew a paltry 3.3% to $127 billion, according to IDC. Says Lorentz: "We had to ride out a storm the magnitude of which we could not have foreseen." Hans-Dieter Wiedig, chairman and CEO of Siemens Nixdorf Informationssysteme AG in Munich, Germany, concurs. "This has been the most difficult year the industry has ever experienced," he says.

Across the industry, firms competing for the smaller pie have suffered drastic price cuts and slimmer margins. Furthermore, corporate Europe's poorer-than-expected performance is widely believed to indicate a fundamental change in the economics of the industry in Europe as in the United States. There is a feeling among both vendors and users that IT expenditures have reached some sort of natural limit, having already soared to board-level importance in the last decade.

Five-Year Revenue Rollercoaster

The 25 largest Europe-based IT suppliers were rocked with a double-digit revenue decline dropping below 1987 levels.



MIS managers are now weighing purchasing decisions more carefully, and to a greater extent than ever before they're buying new products more for replacement than expansion. Consequently, vendors have come to recognize that the glory days of high growth and fat margins in hardware products have ended.

The European 25 hardware vendors saw collective revenues from mainframes, midrange machines, PCs and workstations fall 18.8%. Overall, hardware vendors throughout the industry

BY FREDERICK V. GUTERL

saw sales fall by almost 5%, according to IDC figures. Whereas rapid expansion had been corporate Europe's main priority for most of the last 15 years, cost controls have now taken on prime importance, prompting even more far-reaching measures than last year's slashing of work forces. At most firms, the crisis has prompted vendors to accelerate shifts in corporate identities: hardware firms are ramping up continuing efforts to sell software, while software firms are strengthening their resolve to sell services and consulting.

The newest twist to this corporate rethink: last year, technology-sharing agreements with so-called strategic partners became the centerpieces of corporate policy for several of Europe's big hardware suppliers. For example, Bull's main motivation for selling IBM a 5% stake was to avoid having to undertake costly development of its own reduced instruction set computing technology.

Such a move was unthinkable to Bull executives even a month before talks started in autumn of 1991. But, said CEO Lorentz in a recent interview with DATAMATION: "We are now in a world where things are going so fast, so fast....If you would have asked me last September about a potential agreement with IBM, I would have said it's unbelievable, it's crazy for us to make an agreement with IBM...but IBM has changed, the world has changed, and IBM and ourselves are quite a bit different from what we were."

Sharing technology to cut costs is a response to an increasingly desperate situation for Europe's hardware vendors. With the exception of ICL, all reported losses last year. Industry observers have criticized many firms for not acting quickly enough to seek corporate partners. In particular, critics have reproached Siemens Nixdorf for its apparent determination to go it alone despite its continuing heavy losses. By moving closer to parent Siemens AG in marketing and development, following Siemens's acquisition of all outstanding SNI shares, SNI hopes to be able to maintain its investment across its broad product range.

Ing. C. Olivetti & Co. SpA, which lost L450 billion ($362.6 million) last year, has come under increasing fire for not joining forces with a stronger partner. Analysts have long expected Olivetti to be put up for sale and doubt whether the company can survive long in its present form.

Despite the fervor for technology sharing, some analysts doubt whether it will be enough to stem the losses that Europe's big IT firms have suffered for the last few years. With the European single market due to be implemented by year's end, many observers believe a massive restructuring is due for the industry. They believe suppliers, despite their rhetoric that the days of protected domestic markets are over, haven't grasped the urgency with which they should trim the fat in their organizations. "It's still too easy for these

The DATAMATION European 25

EUROPEAN RANK '91	EUROPEAN RANK '90	WORLD RANK '91	COMPANY	1991 IS REVENUE	1990 IS REVENUE	% CHANGE	1991 TOTAL REVENUE	IS AS % OF TOTAL REVENUE	NET EARNINGS '91	NET EARNINGS '90
1	1	9	Siemens Nixdorf	7,308.6	7,654.7*	-4.5%	7,308.6	100.0%	-470.8	N/A
2	2	11	Olivetti	6,050.8	6,414.5	-5.7%	6,935.5	87.2%	-326.6	50.8
3	3	12	Groupe Bull	5,929.8	6,349.6	-6.6%	5,929.8	100.0%	-585.2	-1,246.0
4	5	18	ICL	3,308.1	2,862.9	15.6%	3,308.1	100.0%	72.8	122.6
5	8	34	Cap Gemini	1,776.3	1,684.9	5.4%	1,776.3	100.0%	99.3	112.9
6	6	40	Memorex	1,533.1	1,634.9*	-6.2%	1,552.5	98.7%	-385.9	-68.9
7	11	52	Finsiel	1,015.6	816.7*	24.3%	1,086.5	93.5%	23.8	22.0*
8	12	62	BT	823.6	776.8	6.0%	23,500.9	3.5%	3,728.4	3,142.1
9	14	64	Comparex	752.3	689.4	9.1%	752.3	100.0%	18.1	26.0
10	13	69	Racal	679.0	625.2	8.6%	3,681.7	18.4%	220.3	205.7
11	15	73	Sema Group	640.5	533.4	20.1%	727.5	88.0%	18.7	18.5*
12	16	80	Sligos	569.3	530.7	7.3%	569.3	100.0%	30.3	29.4
13	18	95	SD-Scicon	472.7	455.6	3.7%	472.7	100.0%	37.2	-17.2
14	—	98	Getronics	442.5	362.7	22.0%	442.5	100.0%	28.5	25.6
15	—	103	Software AG	429.2	361.4*	18.8%	429.2	100.0%	N/A	N/A
16	23	104	SAP	426.2	308.8*	38.0%	426.2	100.0%	74.3	50.8*
17	21	105	GSI	422.8	375.3	12.6%	422.8	100.0%	18.6	17.0
18	—	116	Logica	348.9	338.9*	2.9%	348.9	100.0%	0.0	9.4
19	22	118	Dowty	340.4	348.1*	-2.2%	1,356.3	25.1%	70.5	97.7*
20	24	121	CGI	315.6	289.1	9.2%	315.6	100.0%	29.7	26.4
21	17	122	Amstrad	313.4	518.7	-39.6%	701.6	44.7%	-35.1	60.4
22	25	129	Reuters	284.5	264.7	7.5%	2,586.6	11.0%	404.6	367.8
23	—	130	Origin	283.4	215.3	31.7%	283.4	100.0%	4.5	11.5
24	20	131	Norsk Data	282.0	383.5	-26.4%	282.0	100.0%	-126.0	-20.6
25	—	147	Tulip	215.5	214.7	0.4%	215.5	100.0%	8.7	10.1

* Restated figure N/A= Not available
All revenue figures are in $ millions

Europeans to sit back and say, "OK, we're making losses, but at least we've lowered our debt,' " says analyst Susan Anthony of Robert Fleming Securities Ltd. in London.

That European companies are having a hard time overcoming their historical dependence on protected markets has given U.S. companies, used to a more competitive situation, a leg up. Although the relatively stable dollar meant that U.S. suppliers could not reap the profit windfall they had enjoyed the year before when the dollar plummeted, they still fared better than their European rivals. Among Europe's profitable operations, U.S. firms dominate—Apple Computer Inc., Compaq Computer Corp. Digital Equipment Corp., Hewlett-Packard Co. and IBM were profitable in Europe last year.

Still, for all hardware vendors there was little to crow about in 1991. Revenue from the European 25 large-scale systems vendors grew only 7%, compared with the previous year's growth of 12.5%. Midrange systems plummeted 31.3% in 1991 compared with a 1990 loss of 1.5%. This drop, however, includes the significant loss of NV Philips' GL and Mannesmann Kienzle GmbH from the DATAMATION list, due to the acquisition of their IT businesses by Digital Equipment Corp.

According to IDC, revenue from large and midrange systems fell 9% and 4% respectively for the whole industry. UNIX vendors were the only victors in the battle for European hardware contracts. Last year the UNIX market grew 10% to $9 billion, according to market research firm Dataquest Europe SA in Paris.

However, cutthroat competition, which drove prices and profit margins down sharply, made this victory Pyrrhic. For instance, although ICL grew its UNIX revenue 37% to garner 2.6% of the market, ICL cited low margins for these products as the biggest reason for its 41% profit plunge.

Even the market for personal computers was lackluster compared with previous years. The trend of replacing larger computers with PCs and workstations continued last year, but a combination of slower-than-expected growth in demand and overproduction sent prices toppling. Since companies discounted PC and workstation prices between 20 and 40% early in product life cycles, the European market grew only 3% by value, according to IDC. DATAMATION's European 25 companies lost 25% in PC revenue in 1991, again due in part to the loss of vendors from our list.

With the single market in sight, Europe's big corporations continued their scramble to implement enterprisewide corporate networks. This trend contributed to the relatively healthy 5% rise in sales of data communication hardware, according to IDC. In addition, several telecommunications firms, including BT PLC and Sprint International, entered the European market for value-added network services.

The software industry in Europe fared better than the hardware industry, growing 12% last year, according to IDC. The DATAMATION European 25 firms increased their software revenue by a total of 20.5%. Nevertheless, many firms reported a slowdown in demand for systems integration, applications software and consulting. In addition, development tools that make it possible to reuse a high proportion of code even

The DATAMATION European 25 By Technology

	COMPANY	1991 IS REVENUE	MAIN-FRAME	MID-RANGE	PCs	WORK-STATIONS	SOFT-WARE	PERI-PHERALS	DATA-COM	SERVICES	MAINTE-NANCE	OTHER
1	Siemens Nixdorf	7,308.6	964.4	934.3	602.8	211.0	964.4	1,733.0	150.7	301.4	1,446.6	
2	Olivetti	6,050.8	115.6	478.6	1,586.1		630.8	1,018.6	164.1		1,094.5	962.5
3	Groupe Bull	5,929.8	830.2	355.6	889.5		593.0	1,067.4		415.1	1,363.9	415.1
4	ICL	3,308.1	582.0	268.8	297.4	191.0	625.6			213.9	752.2	377.2
5	Cap Gemini	1,776.3					284.2			1,492.1		
6	Memorex	1,533.1			207.6	44.3	3.7	888.2			389.3	
7	Finsiel	1,015.6					609.4			406.2		
8	BT	823.6							391.5	432.1		
9	Comparex	752.3	285.9					346.0			120.4	
10	Racal	679.0							679.0			
11	Sema Group	640.5					640.5					
12	Sligos	569.3			85.4		56.9			427.0		
13	SD-Scicon	472.7					47.7			425.0		
14	Getronics	442.5			26.6	17.6		88.5	35.4	141.6	132.8	
15	Software AG	429.2					153.7			170.0	105.5	
16	SAP	426.2					426.2					
17	GSI	422.8					101.5		321.3			
18	Logica	348.9	7.1	12.3	3.5	3.5	215.3			72.3		34.9
19	Dowty	340.4							340.4			
20	CGI	315.6					142.4			165.7		7.5
21	Amstrad	313.4			271.6		13.3	17.6			10.9	
22	Reuters	284.5								284.5		
23	Origin	283.4								283.4		
24	Norsk Data	282.0		140.3	14.2		22.7			104.8		
25	Tulip	215.5			215.5							

All revenue figures are in $ millions

on big custom projects such as airline reservation systems have contributed to an erosion in profit margins for software firms.

Overall, software firms accustomed to far higher rates of growth were caught unawares, says Michel Berty, general secretary at software and services firm Cap Gemini Sogeti in Paris, which reported sharply lower growth in revenue and profits. "For the first time, the crisis in the general economy reached us," he says. A general pessimism connected with the recession made customers reluctant to go ahead with large projects says Berty. In addition, declining hardware prices put downward pressure on software prices, vendors say.

The good news, however, is that cash-strapped users looking to shed overhead turned in droves to outside software and services firms to install and maintain their internal networks and data centers. Firms such as Cap Gemini and Electronic Data Systems Corp. reported a surge in demand for facilities management.

There is little indication that the IT industry will be rescued by any drastic recovery. Indeed, the effects of the single market have been mixed. Whereas it has stimulated the market for international networks and communications, it may also have contributed to the severity of the recession.

The main problem has been strong growth in Germany's economy due to the effects of reunification, which has stimulated inflation and kept German interest rates high. Since the European currencies are linked, Germany's neighbors have been forced to keep their interest rates high as well, increasing the cost of cash that firms borrow to invest in capital expenditures, including IT equipment. This year, however, Germany's economy is expected to go into recession. If so, the Bundesbank may relax interest rates, which have already come down from their peaks of a year or so ago. Elsewhere, modest recoveries are expected in Britain, France, Italy and Scandinavia.

Even with a potential German recession, IDC predicts that Europe's IT industry will grow an average of about 5% a year for the next two years—slightly faster than Europe's average Gross National Product. However, 90% of that growth is expected to come from software and services, favoring mostly smaller companies.

Sadly, Europe's IT industry is facing an uphill climb. Says Peter Bonfield, chairman and CEO of ICL: "This will be another difficult year. Earnings will be under pressure. Everybody's going for what little business there is. So far in Europe, nothing much is happening." ■

Foreign Exchange

Values of foreign currency (equivalent to one U.S. dollar) used in this year's DTM100*.

Denmark	Kr6.398
Finland	Mk4.043
France	Fr5.641
Germany	DM1.659
Italy	L1241
Netherlands	G1.87
Norway	NKr6.428
United Kingdom	£0.567

* OECD average exchange rates

The Top 25 Suppliers Into Europe

RANK '91	RANK '90	COMPANY	COUNTRY	1991 EUR. IS REVENUE	1990 EUR. IS REVENUE	% CHANGE	TOTAL REV. 1991	TOTAL REV. 1990	% CHANGE	EUR. % OF TOTAL	% CHANGE
1	1	IBM	United States	25,136.0	26,836.0	-6.3%	62,840.0	67,090.0	-6.3%	40.0%	0.0%
2	2	Siemens Nixdorf	Germany	6,943.2	6,889.2*	0.8%	7,308.6	7,654.7*	-4.5%	95.0%	5.0%
3	3	Digital	United States	6,549.4	5,490.4	19.3%	14,237.8	13,072.3	8.9%	46.0%	4.0%
4	4	Olivetti	Italy	5,082.6	5,324.1	-4.5%	6,050.8	6,414.5	-5.7%	84.0%	1.0%
5	5	Groupe Bull	France	4,269.5	4,508.2	-5.3%	5,929.8	6,349.6	-6.6%	72.0%	1.0%
6	6	Hewlett-Packard	United States	3,968.6	3,615.5*	9.8%	10,726.0	9,514.5*	12.7%	37.0%	-1.0%
7	—	Fujitsu	Japan	2,899.6	1,483.4*	95.5%	19,330.9	12,361.5	56.4%	15.0%	3.0%
8	9	ICL	United Kingdom	2,845.0	2,290.3	24.2%	3,308.1	2,862.9	15.6%	86.0%	6.0%
9	7	Unisys	United States	2,400.0	2,883.6	-16.8%	8,000.0	9,302.0	-14.0%	30.0%	-1.0%
10	12	Apple	United States	1,883.8	1,607.2	17.2%	6,496.0	5,740.0	13.2%	29.0%	1.0%
11	11	Compaq	United States	1,635.7	1,691.1	-3.3%	3,271.4	3,598.0	-9.1%	50.0%	3.0%
12	—	AT&T	United States	1,470.4	261.0	463.4%	8,169.0	2,900.0	181.7%	18.0%	9.0%
13	14	Canon	Japan	1,087.9	1,171.6*	-7.1%	3,751.5	4,040.1	-7.1%	29.0%	0.0%
14	19	Sun	United States	1,036.4	828.9	25.0%	3,454.7	2,762.8	25.0%	30.0%	0.0%
15	18	Finsiel	Italy	1,015.6	816.7*	24.3%	1,015.6	816.7*	24.3%	100.0%	0.0%
16	17	Xerox	United States	966.9	980.0	-1.3%	2,930.0	2,800.0	4.6%	33.0%	-2.0%
17	23	Commodore	United States	903.5	746.6	21.0%	1,038.5	995.7	4.3%	87.0%	12.0%
18	—	Andersen Consulting	United States	881.4	639.2*	37.9%	2,260.0	1,880.0	20.2%	39.0%	5.0%
19	22	Wang	United States	698.4	756.2	-7.6%	1,940.0	2,363.0	-17.9%	36.0%	4.0%
20	—	Prime	United States	691.2	476.7	45.0%	1,382.4	1,589.0	-13.0%	50.0%	20.0%
21	—	Microsoft	United States	682.8	444.0	53.8%	2,275.9	1,480.0	53.8%	30.0%	0.0%
22	24	Comparex	Germany	677.0	654.9	3.4%	752.3	689.4	9.1%	90.0%	-5.0%
23	20	Memorex Telex	Netherlands	659.2	681.7*	-3.3%	1,533.1	1,634.9*	-6.2%	43.0%	1.3%
24	—	Sema Group	United Kingdom	627.7	522.7	20.1%	640.5	533.4	20.1%	98.0%	0.0%
25	25	Tandem	United States	618.5	618.1	0.1%	1,932.9	1,873.1	3.2%	32.0%	-1.0%

* Restated figure
All revenue figures are in $ millions

SNI's Wiedig:

The Strategy Is Right

Dr. Hans-Dieter Wiedig, president and chief executive of SNI, discusses why he believes the Siemens-Nixdorf merger, despite its current problems, is working.

Siemens Nixdorf Informationssysteme AG's first full year as a new company was one full of organizational and financial challenges. At the helm, guiding the company through the tumultuous months of 1991, was chief executive officer Hans-Dieter Wiedig. Wiedig met recently in Germany with DATAMATION editor-in-chief David R. Brousell, international editor Elaine Appleton and European contributing editor Fred Guterl to examine the current state of Europe's largest indigenous supplier.

Q: *Certain assumptions were made as the basis for the merger with Nixdorf, such as economies of scale, to be more competitive and to be able to stand outside the German market. Looking back now, have you verified the assumptions? Are the concepts still right?*

A: I think they are right. Siemens concentrated on the mainframe business and also started a UNIX business in Europe and were relatively successful with marketing that. Nixdorf had solutions in the small- and medium-sized companies where Siemens wasn't well represented and only had a very small market share.

When the [opportunity] with Nixdorf arose, we asked ourselves "should we take it or not?" It would have been better to say this

earlier—two or three years ago—because the economic conditions at Nixdorf had been better. However, you can't choose this, you have to take it or leave it. That's the reality. But it's always a strategic consideration as to whether it is the right move.

That move was, and is, a very difficult one, that's true. It was more difficult than we expected. But here is the strategic point. We now have a business from mainframes right through to point-of-sale terminals. We now have Nixdorf point-of-sale customers that have subsequently installed mainframes. Siemens had mainframe customers that have now installed banking solutions from the Nixdorf side. It has worked, but not as quickly as we had hoped.

Q: *When the merger with Nixdorf first took place the idea was to create a new organization, a new culture in SNI. But now that Siemens has acquired the entire company, is this a contradiction?*

A: I don't think so. The intention is to have 100% backing for SNI from Siemens, but keeping SNI as a company with its own identity. Although 100% of the shares are owned by Siemens, SNI remains a company in its own right, and this is very important. If you look at our competitors—which I always call universalists—none of them are stand-alone entities; they are all in combination with other companies and with other technologies....

NCR has joined with AT&T; IBM is trying to get partners to make it bigger. So the new trends in the industry help universalists. Why? Because modern technology in data processing is going away from islands of automation in a company. Now we have the opportunity to make data processing a comprehensive system going through the whole company, the whole organization. I call it the nervous system....

But it's very difficult for companies to do this, and that is the major idea, in my opinion, behind this new structure in the data-processing

industry and why the closer affiliation with Siemens makes sense.

Q: *SNI's first year was a tough one financially, partly because you attempted to combine Siemens and Nixdorf as a recession occurred. But if you could strip away the restructuring costs, what would the financial picture be with regard to the losses? What percentage of the losses would have nothing to do with the merger?*

A: Yes, I will try. I want to emphasize this: the whole industry is in a very difficult situation, and it has been the most difficult year this industry ever experienced. If you look to the results, most of the companies have red figures without any merger. If I were to comment on what part of the losses last year were due to the merger, and, on the other hand, due to the business conditions, then I would say about half and half.

Q: *What's your reading about the mood, the level of confidence within the customer base at this time?*

A: The backing from Siemens was very important. Now also our customers are quite sure SNI will not disappear because of problems particularly from the merger and from the whole industry situation as well.

Q: *How have you felt personally throughout this time period with the merger? Are you maintaining your patience or have you gotten angry or impatient with the pace of improvement?*

A: I went through all these stages you've described. You get angry and you get frustrated and so on, and you increase pressure. But you come to realize that if you increase pressure just one percent more, the system will fall down. So you can only solve a certain amount of problems within a certain time. The question is not whether you have the strategic solution in your head, which we believe we do, the problem is to have it fulfilled through an organization. ■

The financial performance of Siemens Nixdorf Informationssysteme AG was a huge disappointment last year. Depressed sales following the abrupt merger of Nixdorf Computer AG and Siemens AG's computer division in October 1990 led to a hemorrhaging of red ink. SNI lost DM781 million ($471 million) on DM12.1 billion ($7.31 billion) in revenue for 1991.

Company officials attribute half of the loss to higher than expected restructuring costs and the other half to the recession. Expected personnel savings were slow to materialize, the company says, due to delays in redeploying staff. Negotiations with so-called works councils—German law gives unions a say in management for a number of months after the merger—eventually led to the layoff of 3,000 employees. Yet, the consolidations weren't fast enough or deep enough to stanch the losses. Company officials had expected to come close to breaking even in 1991, but that milestone may not be reached for years. Those officials now hope to halve the loss in 1992. However, analysts say the cost reductions to date are inadequate.

"Three thousand people is not nearly enough," contends Susan Anthony, an analyst at Robert Fleming Securities Ltd. in London. "Nixdorf itself was horribly overmanned, and if you put together two companies with strong presences in the German market, you've got to have a great deal of overlap."

President and chief executive officer Hans-Dieter Wiedig is under pressure to turn SNI around. Last year, Siemens AG spent more than DM787 million ($474 million) to acquire the remaining SNI shares it didn't already own to bolster the ailing firm.

SNI officials say things are under control, but they acknowledge that they underestimated the challenges of integration. It took 16 months to patch together the two companies' computerized order-processing networks. "There are 200 different internal applications within the two companies," says Wiedig. "You can't imagine what has to be done to harmonize them. It is very difficult."

The network integration trouble underscores some of the problems SNI has had to contend with in rationalizing its proprietary Nixdorf and Siemens products, as well as their UNIX lines. However, SNI expanded its offering of UNIX products in 1991 by introducing a line of reduced instruction set computing (RISC) servers based on the R4000 processor from Mips Computer Systems Inc. It also introduced software designed to be portable from Nixdorf's midrange systems to its UNIX platforms. However, its extensive migration plan to wean customers away from proprietary products to UNIX-based systems has met so far with lackluster response.

Indeed, many customers are not happy with SNI. Some complain it is too bureaucratic, reflecting Siemens's lethargic personality. "Nixdorf was a small, responsive company," says a German data-processing manager and original Nixdorf customer. "SNI now is just like IBM—too many people and too much bureaucracy." In response, Wiedig asserts that SNI remains committed to preserving the innovative culture that made Nixdorf so successful in the early and mid-1980s.

Wiedig points to a 23% increase in orders in the first five months of the new fiscal year as cause for hope. In addition, he's reduced production and instituted other cost-saving measures. However, analysts say SNI

should move fastr. "It's terrifying that it isn't doing anything more urgently," says analyst Anthony.

—Frederick V. Guterl

Ing. C. Olivetti & Co. SpA paid the price for a misguided strategy, stubborn costs and some indifferent products last year. The company reported a net loss after five years of declining earnings. The dramatic bank fraud conviction of Olivetti's high-profile chairman Carlo De Benedetti in early 1992 further dimmed the company's image as one of Europe's high-technology stars and overshadowed both its rescue plan and a raft of new product introductions.

Declining revenue, tighter margins and a drastic restructuring led Italy's largest IS company to report its first net loss, L450 billion ($326.6 million), since chairman De Benedetti took control in 1978. IS revenue dropped 5.7% in 1991 to $6.05 billion (L7.5 trillion). The loss was inflated by the inclusion of part of the restructuring costs for 1992, which covered the closure of a facility and the elimination of 1,500 workers. Olivetti shed 7,200 employees last year, 13% of its work force.

"Olivetti has had a tough time, but then so has everyone. It has cut out the fleshy parts of the business, and the priority now is to control its cost base," says Chris Fell, an analyst with Dataquest Europe Ltd. of Denham, U.K. IS managers say that Olivetti's troubles, and De Benedetti's, won't dissuade them from further purchases. For example, Peter Van Hees, IS manager with Dutch bank Rabobank Nederland, continued a seven-year contract worth more than $400 million with Olivetti last April, "knowing that they were going to report a loss," says Van Hees. As for the conviction, he states: "If he goes to prison, I don't think it would be the death of the company."

The financial crisis led De Benedetti, who controls around 44% of the company's voting shares, to return to day-to-day management after almost a decade away from the scene. He ousted Vittorio Cassoni as chief executive officer and reorganized the company to reduce costs and increase effectiveness.

De Benedetti reunited the two main Olivetti operating units. One unit had sold commodity type office products and low-end PCs while the other pushed PCs and big-ticket systems to corporate clients. Elserino Piol, who was chief executive officer of the systems unit and is now chief operating officer and De Benedetti's second in command, acknowledges that the divided structure hampered PC sales, the single largest source of revenue for Olivetti.

In systems, Olivetti introduced two new UNIX-based minicomputer families: the Intel-based LSX 5000 line and the LSX 6500 line of high-end reduced instruction set computing (RISC) systems. The latter machines are sourced from Pyramid Technology Corp., but Olivetti will introduce its own high-end line, the LSX 6000, using the R4000 processor from Mips Computer Systems Inc.

Last year's sales of the LSX 5000 line were disappointing. Piol says that the LSX 5000 did not ship until midyear and claims that customers are waiting longer than they used to before buying new systems. Lengthening selling cycles also hit sales of IBIsys, Olivetti's office information system software, introduced last year. The Gartner Group Inc. of Stamford, Conn., notes that the company's reach seems to exceed its grasp. Gartner suggests that its experience in selling systems does not match the breadth of its current system offering. *—Geoff Nairn*

Unlike many computer companies that were sailing along fine when the economic skies began to darken in 1991, Paris-based computer giant Compagnie des Machines Bull was already at a financial nadir. Digesting its acquisition of Zenith Data Systems and the outstanding shares of Bull HN Information Systems Inc., its U.S.-based venture with Honeywell Inc., had contributed to a monumental Fr6.79 billion ($1.25 billion) loss in 1990. "We were more vulnerable than most of our competitors to the recession," admits Francis Lorentz, Bull's chairman and chief executive officer.

Against the dismal financial backdrop of 1990, Bull's Fr3.3 billion ($585 million) loss in 1991 looks like good news. Revenue was down 6.6% over the previous year's restated level of $6.35 billion (Fr34.6 billion) to $5.93 billion (Fr33.5 billion). Indeed, despite its myriad financial problems, Bull found its fortunes in 1991 to be relatively upbeat. For one thing, most of the anticipated Fr4.5 billion ($826.3 million) cost of restructuring was absorbed in 1990, clearing the slate for a fresh start last year. New alliances with IBM and NEC Corp. and Fr2 billion ($354.5 million) from the French government secured much needed investment for Bull to round out its product line.

Perhaps the most urgent task facing Bull's managers in recent years has been to catch up with the rising wave of UNIX and open systems sales,

which currently account for only 10% of Bull's revenue. Significant progress was made earlier this year. Although Bull has been expanding its UNIX line, its strong 46% growth in UNIX products was nonetheless hampered last year due to a long-delayed reduced instruction set computing (RISC)-based server. After a heated competition between RISC chip sets from Hewlett-Packard Co. and IBM, the uncertainty ended when a deal was finally struck between Big Blue and Bull in February 1992. IBM also bought a 5% stake in Bull for roughly $100 million. Bull's RISC servers and workstations began shipping several months ago. "This will put an end to a difficult time during which we had no clear message for our customers about our RISC strategy," says Lorentz.

The key to Bull's UNIX strategy is ensuring a smooth transition to open systems for the 90% of its sales dependent on the disparate mix of proprietary mainframe and midrange computer products left over from the Bull-Honeywell-NEC Corp. partnership. Bull's Distributed Computing Model, a comprehensive architecture based on open standards interfaces designed to link these different systems, won numerous plaudits last year. With this modular approach, clients can gradually migrate to an open computing environment. "Bull's UNIX strategy is starting to pay off," says analyst Dedene Nelson of the Paris office of market research firm Dataquest Inc.

Bull's corporate strategy began to become clear last year, as well. Lorentz is trying to turn his company toward the more profitable software and services businesses and buttress his hardware lines through a network of alliances. The RISC chip deal with IBM is part of a web of arrangements between Bull, France Telecom, NEC and other companies that include an exchange of equity and a sharing of research, technology and products, while at the same time keeping Bull's roots firmly in French soil. More deals are forthcoming.—*Frederick V. Guterl*

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ICL PLC managed to make it through the past difficult year in better financial shape than most of its competitors. Revenue increased 15.6% to $3.31 billion (£1.88 billion), the bottom line was in the black and the company gained market share in the United Kingdom, its largest market.

However, ICL's profit of $72.8 million (£41.3 million) was down 41% from 1990, and the revenue figure includes contributions from several acquisitions, most notably the data systems division of Nokia Group of Finland and two software and service companies, The CFM Group of the United Kingdom and Systems House Comdes BV of the Netherlands. Revenue growth from ICL's traditional mainframe and midrange businesses was largely flat last year.

In the late 1980s, ICL moved earlier than most to embrace UNIX and open systems in its product strategy. Yet these products, which now account for the lion's share of ICL's hardware sales, are not particularly profitable. Despite success in the marketplace—sales of UNIX products grew 28%, and sales of personal computers grew 26% last year, excluding the effects of acquisitions—the low profit margins for these products were the main cause of ICL's 30% fall in operating income, according to chairman and chief executive officer Peter Bonfield.

Even so, last year ICL continued to introduce open standards to its products, most notably with its VME mainframe operating system, the first in the industry to comply with X/OPEN Co. Ltd.'s XPG3 portability guide. Open VME may help ICL win contracts such as its recent £200 million ($353 million) deal with British Gas PLC, in which the company beat out IBM. However, it may also erode the company's mainframe revenue.

"On the one hand, you get quite a good marketing story. But on the other hand, you know you're going to get into more of a business problem—much more competition, lower margins on the hardware," Bonfield says.

"You just grit your teeth and say, 'Yup, that's dead right, now what do we do?' We've got to add value with consultancy and services and make damn sure the costs for hardware development are optimized."

Although Bonfield insists that Fujitsu Ltd., which took an 80% stake in ICL in November 1990, does not interfere in the day-to-day affairs of the company, the backing of the Japanese electronics giant has eliminated the precarious financial image ICL once had among its European competitors and customers. Bonfield says ICL is on course for a public flotation of 25% of its shares within the next three years, which would leave Fujitsu with 75% and would divest Northern Telecom Ltd. of its current 20% holding. "If we show the market that we can get into growth areas, we'll go onto the stock market," says Bonfield. Analysts are sanguine as well. "ICL has shown yet again that they are one of the best-performing companies in the industry," says Charles Burrows of the London investment firm James Capel & Co. —*Frederick V. Guterl*

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A year ago, executives at Cap Gemini Sogeti were confident that the company had seen the worst of the reces-

sion; the Gulf War had ended, and the industry appeared poised for another year of spectacular growth.

However, things turned out differently. For the first time since its creation in 1975, Cap Gemini had to weather a sharp slowdown in the normally recession-proof software and services industry in 1991. Revenue was up a mere 5.4% to $1.78 billion (Fr10.02 billion)—far short of chairman and chief executive officer Serge Kampf's previously stated goal of 30% average yearly growth. Meanwhile, net earnings dropped 12% to $99.3 million (Fr560 million). The company's poor performance "came as a shock," says general secretary Michel Berty.

The slowdown came just as Cap Gemini was laying the foundation of its attempt to become a worldwide software and services powerhouse, doing everything from consulting and software development to systems integration and facilities management. In recent years, Cap Gemini reinforced its leadership role as Europe's biggest software and services firm through acquisitions and alliances. Cap Gemini made its biggest deal last year in a merger with Debis System Haus, the computer services arm of German car maker Daimler-Benz AG. In addition, it acquired smaller computer services firms, such as Scandinavian firm Programmator in January 1992. Cap Gemini also arranged a joint venture with Volmac Software Groep NV, a leading Dutch computer services company.

Along with its 1990 acquisition of the British software firm Hoskyns Group PLC, Cap Gemini has established a strong European presence. Next year, company executives plan to turn their attention to markets where the Cap Gemini presence is weak—namely, the United States and some of the smaller European countries, such as Spain. Cap Gemini is on the lookout for more acquisitions in the United States, but Berty expects the agreement with Daimler to boost organic growth, as well. The agreement gives the German firm an option to acquire a majority stake in Cap Gemini in 1994 providing Cap Gemini gives its consent. "The Daimler deal hasn't helped us yet in the U.S.," he says, "but it will eventually, because of the name recognition."

Nevertheless, the slowdown has forced Cap Gemini to rethink its methods of working with customers, at least for the time being. In particular, customers have shown a marked desire to cut costs by only commissioning smaller projects likely to produce fast returns. The shift to short-term results has made the big—and more profitable—contracts more difficult to find. "Instead of developing large systems over a long period of time, we've had to be more modest and react more quickly to our customers' problems," says Berty.

When the fog of recession finally lifts, industry observers expect Cap Gemini to continue its sharp upward growth trend. "Cap Gemini and Debis are both very successful companies in their own right," says Amit Chaudhuri, an analyst at International Data Corp. in London. "Together they are a very powerful combination."—*Frederick V. Guterl*

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Faced with mounting losses and falling revenue, Memorex Telex NV finally gave up struggling under its massive debt burden and agreed to restructure under prepackaged Chapter 11 protection. Memorex Telex's managers, owners and creditors prearranged a restructuring and recapitalization plan prior to filing a petition under the U.S. Federal Bankruptcy Act to facilitate the company's revamping.

The momentary visit to bankruptcy court was designed to break the vicious circle of shrinking revenues and crushing interest payments on $1.6 billion in junk bonds, which have led to ever-growing net losses. Declining sales in the company's core businesses, terminals and storage products, plus the ending of an original equipment manufacturer (OEM) contract supplying disk drives for IBM's AS/400 minicomputers, cut IS revenue by 6.2% to $1.53 billion last year. The net loss jumped from $68.9 million in 1990 to $386 million due to the debt. (Memorex Telex's revenue is reported in dollars and was restated downward from $1.95 billion to $1.6 billion.) The company's work force was slashed by 19% to 7,600.

A rescue plan, concluded in early 1992, converted half of Memorex Telex's bonds into equity and transformed the once-privately held concern into a public company quoted on the NASDAQ stock exchange in the United States. "We hate the fact that we had to enter into Chapter 11, even if it was only for six weeks, because everyone thinks we went bankrupt," laments Giorgio Ronchi, chairman and chief executive officer of Memorex Telex.

Despite its net loss in 1991, the company was profitable on an operating basis, Ronchi notes, and the restructuring plan predicts a gradual rebound in performance, with operating income this year just covering interest expenses. However, SoundView Financial Group Inc. of Stamford, Conn., is less optimistic, predicting a $45 million pretax loss for the current fiscal year which ends in March.

Most of Memorex Telex's business still comes from IBM 3270-compatible terminals and controllers, although that business is declining 5% to 10% per year as customers increasingly replace dumb terminals with networked PCs, which Memorex Telex also supplies. Its combined revenue

from dumb terminals and networked PCs dropped 9% in the last fiscal year to $817 million and is predicted by SoundView Financial to remain virtually flat during the next two fiscal years.

Storage products—mostly tape and disk subsystems from Fujitsu Ltd. for IBM mainframes—generate about 16% of the company's revenue. While this business has been shrinking, with revenue dropping 7% in the past year, it offers the best growth prospects among the company's product lines, according to SoundView. The securities firm predicts around 13% growth for Memorex Telex's storage products in the current fiscal year. The company plans to broaden its line of robot tape cartridge libraries to better compete with market leader Storage Technology Corp. of Louisville, Colo.

The restructuring has been received favorably by customers, but Memorex Telex may face more perils in the future. If the pretax losses occur and persist, says SoundView, the company's substantial sales and customer support operations could make it an acquisition target.—*Geoff Nairn*

The most significant event in 1991 for Finsiel SpA (Finanziaria per i Sistemi Informativi Elettronici), Italy's largest software and services company, was a government-backed proposal to merge the state-controlled company with the software arm of Ing. C. Olivetti & Co. SpA, its private sector rival.

The marriage didn't happen, and neither party shed many tears, but the proposal put a question mark over the future of Finsiel, which relies on the government for most of its revenue. Of Finsiel's 1991 IS revenue of $1.02 billion (L1.26 trillion), up 24.3% from the previous year, two-thirds came from central and local government cotracts. Net earnings in 1991 rose almost 8.2% to $24 million (L29.5 billion).

"Our position in the public sector is strong, but not dominant," says Pier Paolo Davoli, chief executive officer of Finsiel. He claims that Finsiel supplies only a third of the total software and services of the Italian government, leaving plenty of room for competitors.

The European Court thinks otherwise. It ordered the suspension of a gigantic contract to computerize the national lottery awarded in 1991 to the Lottomatica consortium, led by Finsiel and a state-owned bank, Banca Nazionale del Lavoro, each of which has a 25.5% stake in the deal. The contract is worth more than L2.5 trillion ($2 billion) over its 10-year life.

The tendering procedure for this contract, as with many Italian public sector contracts, required bidders to be majority-owned by the Italian government. This requirement favored the Lottomatica consortium and thus contravened European Community rules on competition.

To further its nongovernmental business, in 1991 Finsiel began to regroup the 19 companies it controls to focus on specific industrial sectors. The reorganization will be completed this year. One group, under the provisional name of Banksiel, aims to raise the profile of Finsiel's various banking software activities, which accounted for about 15% of the company's revenue in 1991.

Revenue from this financial sector grew 50% in 1991, following the completed acquisition of two Italian banking software houses—Finsiel's first acquisitions. Davoli predicts growth in this sector to settle this year to 20%, similar to the rate of revenue growth for Finsiel's more traditional government contracts.

One of the more immediate problems facing Finsiel is its weak capital base, which is holding back the company's expansion and preventing further acquisitions, says Davoli.

In 1991, Finsiel's two state-owned shareholders—the industrial holding corporation Istituto per la Recostruzione Industriale, with an 87% stake, and the Banka d'Italia, with a 13% share—subscribed to a stock offering that doubled Finsiel's capital to L100 billion ($80 million).

—*Geoff Nairn*

It was another chaotic year for BT PLC, formerly British Telecom.

The telecommunications monolith struggled with questions about privatization, dealt with a continuing deep recession in the U.K. economy, axed thousands of jobs—and through it all, garnered generous profits.

For the calendar year, revenues increased 2.3% to $23.5 billion (£13.3 billion), but profits shot up 19.5% to $3.73 billion (£2.1 billion). Chairman Iain Vallance used these results to justify a notorious 12.5% pay raise to £450,000 ($793,650).

BT's profits haven't made the company popular with domestic customers, however. Indeed, Oftel, the U.K. telecom industry regulator, constantly threatened to take BT to task for its domestic and overseas prices and for alleged monopolistic practices.

Adding more spice to the past year was the general-election campaign, in which the opposition Labour party promised to renationalize the country's telephone backbone network. Such a

move would have left the privately held remainder of BT to carry on the company's mission of becoming the world's leading value-added voice/data services provider. But the Conservative victory relieved BT's anxiety: the whole of BT will remain private for the foreseeable future.

Revenue from international services rose by a disappointingly slim £22 million ($38.8 million) to £1.8 billion ($3.2 billion). There were further letdowns as BT failed to sign up major telecom operators Nippon Telegraph and Telephone and Deutsche Bundepost Telekom to provide worldwide services via its Syncordia joint venture, a new business that BT says will provide global network management to private customers. Without the support of the Japanese and German telecom providers, Syncordia has been unable to get off the ground.

Revenue from providing equipment directly to customers fell by £40 million ($70.5 million) to £1.34 billion ($2.36 billion), a figure likely to decrease further as BT continues to rid itself of all non-service businesses. However, BT has yet to sell its 51% stake in Canadian telephone switch maker Mitel Corp. nearly two years after saying it would do so.

The company has successfully sold off other units, however, including its Micronet on-line PC information service, with 12,000 users, to U.S.-based Compuserve Inc.

BT is also having to shell out millions for the costs of reducing staff. The company, which had slashed its work force by 15,000 in 1990, is cutting as many as 30,000 or more employees from its present roster of 200,000. BT claims that internal automation has decreased its staffing needs.

A growing number of potential competitors to BT's corporate business emerged last year. Large U.S. operator Sprint International entered the European market for long-distance services. The home-grown National Network also poses new competition; the London-based company uses the Post Office's internal network to bring telecom services to domestic users and to bring transatlantic service to the United States and Canada.—*Jon Kaye*

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Rather than buckle under the pressure of declining computer investment in its domestic market and a hesitant recovery in Eastern Europe, Comparex Informationssysteme GmbH began what chairman and chief executive officer Rolf Brillinger calls a "new era" in 1991 as Europe's leading plug-compatible manufacturer.

Comparex, which mainly distributes Hitachi Ltd. products, gained its independence from shareholder Siemens AG in 1991 after Siemens sold its 33.5% stake to the Ludwigshafen, Germany-based chemical giant BASF AG, which previously held 66.5% of the company. The five-year marriage ended with mutual relief. Siemens was free to concentrate on stemming its losses after the merger of its IS operations with Nixdorf Computer AG, and Comparex was able to focus more attention on areas such as laser printers, which formerly suffered from indirect but damaging competition with Siemens.

Comparex was able to weather what Brillinger calls a "relatively gloomy year for the industry as a whole" better than most. The company, which includes eight subsidiaries and a number of distributors throughout the world, reported consolidated revenue of $752 million (DM1.248 billion), an increase of around 9.1% over 1990's level.

Domestic revenue in 1991 was up 9% to $370.1 million (DM614 million). Exports climbed 15% to $382.2 million (DM634 million). Revenue from peripheral systems, roughly 46% of total Comparex sales, rose 8% to $346 million (DM574 million). About 35% of all revenue last year was generated by the growing rental business, which provides a steady stream of profit.

However, the company's net earnings declined 30.4% from 1990 to $18.1 million (DM30 million), due to a number of factors. Heavy discounting by IBM forced massive price erosion in Comparex's major markets. Furthermore, the company made strategic investments in developing systems and expertise to pave the way for its entry into the world of open systems and new technologies such as redundant arrays of inexpensive disks (RAID) storage devices. Comparex also experienced rising costs due to the support of new operations in Eastern Europe.

The revenue gains were the result of strong demand for new products. Deliveries of the new 9/9XX high-end processors helped boost Comparex's mainframe revenues 19% to $285.9 million (DM474 million), marking a return to 1989 levels, when high-end systems accounted for 39% of the company's total sales. Comparex is the only firm marketing Hitachi mainframes and peripherals in Eastern Europe, including the former East Germany.

By the end of 1991, Comparex had installed some 20 9/9XX systems throughout Europe and had announced the addition of two new high-end processors, the 9/950 and the 9/960, supplied by Hitachi. Comparex also introduced additional features for its 6388 automatic cartridge library system and new storage technology for the Unisys Corp. market. —*Peggy Salz-Trautman*

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Racal Electronics PLC set out to prove that it could grow a solid worldwide network products and services organization last year. Over the past several years, Racal has acquired a variety of companies that sold products ranging from local area network hardware to modems to wide area network services. By last year, its various businesses were scattered throughout 10 countries, operating under different names and with some redundant services. In August 1991, it consolidated under the Racal-Datacom Group moniker 15 separate data communications businesses, which now together offer global and domestic network services.

The Group pioneered a network architecture strategy, called Racal Strategic Architecture, designed to enable corporate network users to move from host-based to distributed computing through use of both public and private networks.

Its strategy seems to be paying off. The company estimates that its 1991 IS revenues, which include data communications systems and services and a smaller proportion from sales of electronic design automation software and data security products, grew 8.6% to $679 million (£385 million). Earnings climbed 7.1% to $220.3 million (£124.9 million).

In a rare joint marketing agreement, Racal-Datacom partnered with Atlanta-based telecommunications holding company BellSouth Corp. The two are providing end-to-end network systems for BellSouth Telecommunications Inc. customers, linking BellSouth's private line and switched data services with Racal's T1 multiplexers and other products.

Back on its home turf in the United Kingdom, the company continued servicing its Government Data Network, which is designed to link all government departments across the country. Although company officials say the GDN work is going smoothly, critics have said the network doesn't provide all of the functionality the government needs. Racal won't divulge the amount of the contract, but some analysts speculate its worth in the hundreds of millions of pounds.

Parent Racal Electronics PLC successfully fended off a protracted hostile takeover bid from Williams Holdings PLC last year, spinning off its lucrative cellular telephone business in the process. Racal Electronics distributed its 80% stake in Racal Telecom PLC, now called Vodafone Group PLC, to Racal Electronics shareholders last September. Previously, the profitable mobile telephone concern had had an extremely high market valuation and stock price, thus competing against its parent and skewing the market valuation of other parts of the company. Without Vodafone, Racal-Datacom and other portions of the conglomerate are valued more positively, analysts observe, making it more difficult for a hostile bidder to succeed.—*Jon Kaye*

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Sema Group PLC's revenue growth continued to outpace the industry, but its profitability again failed to increase last year. Sema's corporate revenue jumped 10% to $727.5 million (£412.5 million) in 1991, but net earnings hardly budged, increasing only 1.1% to $18.7 million (£10.6 million). As a consequence, Sema's profit margin declined significantly, to 2.6%. Boosting that percentage to 4 or 5% is a corporate priority for 1992, says chief executive officer Pierre Bonelli.

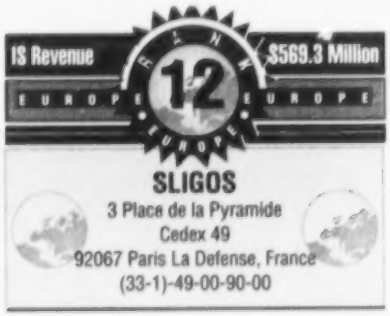
The more urgent hurdle for Sema to overcome is finding a partner to help market and fund development for the I-Line manufacturing software package it acquired with ADV/Orga F.A. Meyer AG of Wilhelmshaven, Germany, in 1990. The acquisition, which represented Bonelli's great hope for cracking the German industrial market, turned into something of a nightmare in 1991. First, the German economic locomotive stalled in the third quarter, causing sales of I-Line to falter; Sema's revenue in Germany grew only 0.4% in 1991. Second, the COBOL-based I-Line gobbled up about half of Sema's total internal research budget, or roughly £7 million ($12.3 million). A deal is expected this summer.

Profit at BAeSema Ltd., the company's U.K.-based joint defense venture with British Aerospace PLC, also dissolved into red ink in the last half of 1991. The loss, says Bonelli, was attributed to the costs of setting up the venture and not to any market problems like those the company faces in Germany. BAeSema, he adds, "should be profitable by the end of the year."

Analysts say Sema's outlook is clouded by external market pressures and by barriers to improving its profitability. "Sema actually has more technical expertise in certain markets, such as defense, energy and transport, than Cap Gemini Sogeti," says Morgan David, manager of the European software and services program for the Paris office of International Data Corp. He adds, however, that Sema faces the same profitability problems that have plagued other European software and services companies fighting over dwindling business in the defense and energy markets.

Bonelli says Sema's main strategy for 1992 is to increase its stature as a systems integrator and to grow internally. The company may acquire some minor

companies in France, Spain or the United Kingdom, he says, "even though I don't see too many interesting targets right now." Most of the firms available for acquisition are body shops, which provide no particular market expertise, he notes. —*Marsha W. Johnston*



Internationalization was the order of the day in 1991 for Sligos, one of France's largest software and systems-engineering houses. The subsidiary of France's largest bank, Credit Lyonnais, heightened its international profile with an aggressive acquisitions campaign. It got control of three companies: 51% interest in German banking systems company Hoell and British banking and financial systems company Nexus, as well as 100% of Spanish banking systems company O'Dati.

The purchase of Nexus was an important victory for Sligos after Britain's Mergers and Monopoly Commission rebuffed its earlier attempt to acquire a far larger monetary systems company called Signet, says Morgan David, manager of the European software and services program for the Paris office of market research firm International Data Corp.

Net income at Sligos rose 3.1% in 1991 to $30.3 million (Fr170.7 million), as revenue rose 7.3% to $569.3 million (Fr3.21 billion), in contrast to the 19.5% and 15% increases, respectively, of the previous year. The slower rate of growth can be attributed largely to a sluggish hardware resale market, according to David. Sligos is France's top-ranking reseller of PCs, according to IDC.

The company has already demonstrated that further global expansion will be its direction for 1992. In February of that year, Sligos acquired a 52% stake in Ikoss, a German systems-engineering company specializing in the banking and industrial sectors. Another German acquisition is in the works, according to Sligos president Gerard Bauvin. "We're negotiating with a company specializing in payments processing," he says. Bauvin expects international revenue to exceed 20% of the total revenue in 1992, double the level of last year.

"Sligos is one of the truly internationalizing French companies. It has not made any mistakes in acquisitions," says IDC's David. "It could well be one of the future global leaders from French industry."

At 33.6%, the percentage of Sligos's revenue from systems engineering last year surpassed that of banking and financial services (30.2%) for the first time, a turn of events, notes Bauvin, that was not anticipated by the company. In 1990, 28.5% of Sligos's revenue came from systems engineering, and 30.6% came from banking services. The company had forecast that systems engineering would make up only 29.7% of revenue in 1991 and that banking would drop to 30%. The shift was due entirely to the acquisition of so many new systems-engineering houses, according to a Sligos spokesperson.

—*Marsha W. Johnston*

The number of major U.K.-owned systems integrators shrank dramatically last August when Dallas outsourcer Electronic Data Systems Corp. bought SD-Scicon U.K. Ltd. for $272 million.

SD-Scicon's wedding came less than a year after French systems house Cap Gemini Sogeti took over London systems integrator Hoskyns Group PLC, leaving only Logica PLC as a major independent U.K. player.

EDS has subsumed SD-Scicon's financial results within its own and does not disclose SD-Scicon figures, but DATAMATION estimates the company's revenues to be £268 million ($472.7 million). This revenue level means the merged operation is the U.K.'s biggest single services provider, although its size pales beside EDS's $7 billion-plus worldwide revenue.

That kind of financial backing and prestige should come as a welcome change for the U.K. systems house, which struggled financially in 1990 under the weight of poorly managed fixed-price government contracts. SD-Scicon can return to its core business of designing and implementing systems for government departments, defense operations and manufacturers, without having to look over its shoulder at its jittery bankers.

Operationally, EDS is treating SD-Scicon as an autonomous subsidiary. Functions such as staffing will remain squarely in SD-Scicon's realm. SD-Scicon officials in the U.K. have been reassuring customers that the company will continue to provide the same level and range of services that it did prior to the merger. Observers say most users are pleased that SD-Scicon—which had heavy losses in 1990—now has the backing of powerful EDS.

Military establishments continue to purchase services and software from the new EDS subsidiary, despite analysts' forecasts that such business would diminish as defense budgets shrink. SD-Scicon's XD-Ada compiler, in particular, continues to be favored by military establishments.

And SD-Scicon is making inroads with its neural network technology.

Numerous corporations and U.K. government departments are evaluating a neural net-based security system called Sentinel. The Home Office and the Department of Transport would employ Sentinel for traffic analysis on the roads and on London's Underground, respectively.

SD-Scicon also claims a big increase in the number of electronic data interchange (EDI) systems installed, particularly in its large base of manufacturing sites.—*Jon Kaye*

GETRONICS NV
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While other European information systems suppliers felt the ravages of recession, systems integrator Getronics NV of the Netherlands saw its 1991 sales and net income soar. Aided by an acquisition spree, revenue shot up 22% to $442.5 million (G827.5 million) and net income rose 11.3% to $28.5 million (G53.3 million). Getronics estimates that without the acquisitions, however, internal growth still amounted to 17% of the sales increase.

How did Getronics perform so well? It followed its customers' rapidly growing needs for software and services—particularly for network integration services, say analysts. The company is slowly attempting to change its mix of revenue-generating enterprises, decreasing maintenance and installation activity while increasing more profitable software services and consulting. In 1991, it derived 30% of its revenue from maintenance and installation, down from 36% in 1990; software services and consulting brought in 32% of revenue, up from 29% in 1990. The remaining 38% came from hardware sales, including data communication equipment, PCs and workstations.

"Getronics has aggressive management that is on the ball with new technology and entering new markets. And they are not shy about ending any activity that is less profitable as the market changes," says Marc Sledebroek, an analyst with Keinwort Benson in London.

The perception of the company as a fair-minded systems integrator that doesn't favor the products of any particular hardware or software vendor has aided its bottom line. Says London-based analyst Dennis Exton of Merrill Lynch: "They are perceived as having no ax to grind," he says.

In order to keep up with the fast-growing market for network integration, Getronics last year expanded its telecommunications expertise. It bought mobile communications/industrial automation specialist Vanandel BV in order to expand its ability to design and deliver network systems. The company also purchased third-party network maintenance specialist Koning en Hartman BV. Also in 1991, Getronics bought disaster recovery specialist Computer Uitwijk Centrum BV in a bid to flesh out the range of services it supplies to its maintainence contract customers. It also acquired a German distributor of computer products.

It is too early to tell whether these acquisitions will pay off, says analyst Exton. But such expansion raises the question of whether Getronics has grown too big too fast, he adds.

One consequence of such rapid external growth was a fall in the average net profit margin to 6.5% in 1991, down from 7.1% in 1990. Getronics attributes the decline to the added expense of enforcing quality measures as the company increases its systems integration activities.

While the company implemented some ambitious plans last year, it refrained from the temptation to create a pan-European empire like that of Dutch competitor BSO/Origin Technology In Business or Paris giant Cap Gemini Sogeti. Until clients demand pan-European services, say company officials, Getronics is content to stay close to its home markets of Benelux, Spain and Portugal.

—*Barbara Benson*

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Software AG chalked up a solid financial performance last year, posting Worldwide Group revenues of $429.2 million (DM712 million) in 1991, up 18.8% from 1990's level. As a privately held company, Software AG doesn't report net income, but it did say that 1991 represented its 22nd consecutive profitable year.

Software AG publicly reports its financial results in two ways. The Worldwide Group figure consists of revenues from the parent company and wholly owned subsidiaries, and product revenues of affiliates that Software AG doesn't own but that are exclusive to Software AG products.

The company also reports figures for the Worldwide Concern. Last year, the Concern recorded $343.6 million (DM570 million) in sales, up 21% from 1990. The Worldwide Concern's revenue includes sales by the parent company as well as its wholly owned subsidiaries (the most prominent of which is Software AG of North America in Reston, Va.) and royalties from affiliates. Revenues generated in the United States and other locations outside Europe totaled $112 million.

Pretax operating profit of the Worldwide Concern was about $16 million in 1991. The decline from the $21 million in 1990 was due to some

extraordinary items recorded in the prior year, according to Michael J. King, president and chief executive of Software AG of North America.

Software AG continued to execute its 1987 plan to reorient itself from a supplier of mainframe-based software to a company providing enterprisewide client/server products based on industry standards.

In December, Software AG rolled out the first products in its Entire suite of client/server products. The Entire Open Function Server provides transparent communications between clients and servers, using some new and some existing Software AG products. In addition, Software AG introduced its first fully relational database management system, Entire SQL-DB Server. This product is based on the DDB/4 relational data base management system owned by Siemens Nixdorf Informationssysteme AG and licensed to Software AG.

In addition to the product and marketing changes, Software AG last year continued to transform the way it operated internally. Following the parent company's acquisition of the North American subsidiary in 1989, it took steps to operate as a worldwide corporation. Last year, it established two key policy boards, Market Strategy and Operations, to coordinate activities of the company. "Our challenge for 1991 was in getting all the communications working, getting all levels of management talking together," says King. "The challenge for 1992 is to move into new channels of distribution, UNIX and the whole right-sizing change IS is undergoing."

As Software AG addresses these challenges, it does so with a relatively new North American management team in place. One notable departure in 1991 was the founder and longtime chairman of the North American unit, John N. Maguire, who formally retired at the end of the year. His title was assumed by Peter Page, who continued as management board member of the Worldwide Group.

—David R. Brousell

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Software vendor SAP AG couldn't have hired Hollywood to write a better script for 1991. Total corporate revenue hiked 38% to $426.2 million (DM707.1 million) from $308.8 million (DM499 million) in 1990, making 1991 the most lucrative year to date for the 20-year-old company. Net income skyrocketed 46.3% to a hefty $74.3 million (DM123.3 million).

Why the big jump? Jeremy Coote, SAP's chief financial officer, says the company's worldwide market share grew substantially last year, as did its customer base. New customers added to SAP's fold last year included Switzerland-based Phillip Morris Europe, France Telecom and Texaco Corp. in Belgium.

The company credits its North American subsidiary, SAP America, for helping with the impressive bottom-line growth. The company reports an astounding 265% revenue growth over 1990, helped by new contracts with such heavyweights as Cincinnati Gas & Electric, Hitachi Data Systems Corp. and Mobil Oil Corp.

In October, SAP released version 5.0 of its R/2 System, a mainframe-based jack-of-all-trades package that includes a set of 10 application modules, including financial, human resources, materials management and other functions, tied to a central database.

This month, SAP will introduce its much-anticipated R/3 UNIX-based cooperative processing system in Germany. R/3 is the next-generation, UNIX-based version of R/2. The company says R/3 will offer functions similar to those of R/2, but will run in a client/server mode on workstations and servers that use the UNIX operating system.

The R/3 system is based on Oracle Corp.'s relational database management system and will run on IBM's AIX, Hewlett-Packard Co.'s HP-UX, Siemens Nixdorf Informationssysteme AG's SINIX and other UNIX operating systems.

"The R/3 System started out as an application for the R/2 System," says SAP vice chairman Hasso Plattner. "Now, it is an equal system for distributed processing," he says.

The company will also continue to sell and support the R/2 System. R/2 users will be able to share data with R/3 systems, and all existing R/2 applications will run under R/3, according to Plattner.

Plattner says the company has its future strategy mapped out to keep the big revenue figures rolling in. He says SAP will continue to court large customers, but, with the addition of the R/3 System to its lineup, SAP will target smaller companies, hoping to add some 2,000 a year to its customer list.

"Our biggest threat to that is spoiling our chances by blowing up the new system, by not having the right quality," says Plattner.

—Mike Ricciuti

LA GÉNÉRALE DE SERVICE INFORMATIQUE
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La Générale de Service Informatique continued to internationalize its business in 1991, a course it embarked upon only toward the end of 1990. "GSI was late getting into the internationalization process,"

says Morgan David, manager of the European software and services program for International Data Corp. in Paris. "It was occupied with reducing its debt from the buy-out." The leveraged buy-out by GSI employees from Alcatel-Alstholm CGE was completed in November of 1990, leaving GSI with no debt, says Jean-Paul Brousse, GSI's vice president of marketing.

The United States and Germany were the targets last year. GSI purchased Warehouse Management Systems, a U.S. subsidiary of IMI Systems that had $1.8 million in revenue in 1990. Warehouse Management's relatively small operation complements GSI Transcomm's strength in distribution and logistics, says Brousse. GSI also bought Lammert, a German vendor of payroll and human resources management software packages with $17 million in revenue on 1990.

The Lammert acquisition follows up GSI's 1990 purchase of German firm Weber and Partner and Dutch concern Ucoms. All three companies provide good marketing bases for network integration services, which is one of GSI's core areas and a favored development direction, says David.

In further international moves in 1991, GSI opened up its first Asian subsidiary, in Singapore. GSI Information Systems Pte. Ltd. is charged with marketing, installing and supporting GSI's Tolas software in Singapore, Hong Kong and the rest of the Far East. Brousse states that "we don't have a great presence or lots of contracts yet in Asia, but we have lots of hope there."

In the meantime, GSI's total revenue for 1991 was up 12.6% over 1990 to $422.8 million (Fr2.39 billion). Net income climbed 9.4% to $18.6 million (Fr104.2 million). Operating income was up 24.3% to $29.1 million (Fr164.1 million).

—Marsha W. Johnston

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The impact of the rolling worldwide recession stunned Logica PLC last year. The systems integrator had its first after-tax loss: a minuscule £967 ($1,705) on revenue of £197.8 million ($348.9 million). It had recorded a net income of £5.3 million ($9.4 million) a year earlier, but fiscal 1991 found Logica reeling from a decline in business, a downsizing and restructuring of U.S. operations, the cost of 400 layoffs and the burden of carrying surplus London office space.

Among the casualties was an R&D project to automate television studios. Logica withdrew from the ill-fated undertaking. "It became clear we didn't meet the expectations of our clients," says Logica marketing director Marion Lewis.

Such financial woes are new for Logica. Over two decades it carved a reputation for building and developing large systems, often for clients owning a potpourri of hardware and software systems. "If you want something developed from scratch, Logica has the name worldwide," notes London analyst Charles Burrows of James Capel & Co.

Some 75% of Logica's revenue comes from systems integration, and another 25% from consulting work. The company's bread and butter clients are U.S. and U.K. banking and insurance companies, U.K. water and electric utilities, and defense and government contracts. At the end of 1991, 52% of Logica's revenue was from the U.K., 26% from the rest of Europe, and just 9% from the U.S.

Marketing director Lewis says that this year, about one-third of its revenue will come from outsourcing as Logica moves away from fixed-cost systems integration contracts. It wants to be "paid by the level of service we can offer, so that we're being compensated for value delivered," Lewis says. Logica is uncertain if it will transfer clients' assets and employees to Logica as part of its outsourcing strategy.

U.S. operations squeezed a profit of £400,000 ($705,000) in the last half of 1991 after two years of losses. Logica slashed its costs by 30% in 1991 by centralizing sales and marketing. It also hired a new president and a vice president of sales and marketing. Managing director David Mann is "delighted that under new management the U.S. operation is now trading profitably, but the next stage is to look at growing the business," a process that is sure to be slow at first, says Mann.

—Barbara Benson

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Aerospace and defense conglomerate Dowty Group PLC, which as recently as 1990 had been snapping up data communications businesses around the globe, last year considered divesting itself of those new businesses, which are consolidated under the Dowty Communications label. Struggling to fight off a hostile takeover, the Group felt pressure from financial analysts to let go of Dowty Communications, which analysts had believed to be a drain on the Group's core businesses.

But the Group successfully fought off the takeover, and officials now say it will hold on to Dowty Communications, which has turned

out to be healthier than expected.

At first glance, it would appear that analysts had reason to be skeptical about the division's continuing ability to contribute to the Group's bottom line. Dowty Communications's revenue dropped 2.2% to $340.4 million (£193 million) in 1991. Consequently, its contribution to group revenue, which grew 5.2% to $1.36 billion (£769 million), slipped to 25% of total corporate revenue from 1990's 27% share. The Group does not disclose profits of individual divisions.

But Dowty Communications's revenue decline is rather misleading, coming a year after bolstering its bottom line through a major acquisition. In 1990, extraordinary 49% revenue growth came in large part from its purchase of Danish data communications manufacturer Dataco A/S. In 1991, solid demand for both systems integration services and network products allowed the division to keep its staffing level roughly the same, in contrast to its announcement the prior year that it would have to cut staff by 17%.

This healthy turn of events has allowed it to aggressively acquire complementary products and services and to invest heavily in research and development.

Among the results of these activities is a new frame relay WAN system, multiprotocol bridge/routers (brouters), intelligent hubs and narrow-band Integrated Services Digital Network (ISDN) interfaces. In development are high-speed LANs based on the 100-megabit-per-second Fiber Distributed Data Interface (FDDI) specification; cell relay systems based on the emerging asynchronous transfer mode (ATM) standard; and broadband ISDN products.

In addition, the company is continuing to develop its modem line, whose products range from low-cost personal computer add-in cards to enterprisewide fax/modem servers.

Its diverse product line also includes Cognito, a mobile data transmission system launched last year. Unfortunately for Dowty, Cognito sales have not matched the high hopes with which it was launched.

—Jon Kaye

IS Revenue $315.6 Million

RANK EUROPE 20 EUROPE

CGI INFORMATIQUE

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Among France's large software and services companies, CGI Informatique has the distinction of being the most profitable, with the highest ratio of net earnings to revenue. CGI upheld that distinction for its last fiscal year, which ended August 31, 1991, when that ratio totaled 9.4%. DATAMATION estimates that CGI recorded a rise in consolidated revenue of 9.2% to $315.6 million (Fr1.78 billion) for 1991, with net income of $29.7 million (Fr167.6 million), a 12.5% increase from the previous year.

Certain small French software and services companies have higher margins, says Morgan David, manager of the European software and services program for the Paris office of market research firm International Data Corp. However, CGI has typically bested competitors in its weight class. Why? "Margins are high on CASE [computer-aided software engineering] products, and CGI manages to add a range of services to those products," says David. "CGI has also always remained on the crest of the wave of investing and exploiting new technologies," which attract a higher price premium than old technologies.

In PACBASE, for example, CGI has one of the largest installed bases of CASE tools in the world, according to David. This provides CGI with the distinction of being one of an elite group of European software companies that are successful with packaged software in the U.S. market. In fact, between 28 and 29% of the 1992 revenue is expected to come from the United States, says Jean-Louis Bernaudin, CGI director of marketing; 21% is expected to come from Germany.

CGI's total revenue for 1992 should reach Fr2.1 billion ($372 million), predicts chairman Robert A. Mallet. This would be about a 20% increase from 1991. However, Bernaudin says, external growth will be lower in 1992 because CGI isn't likely to have as many acquisitions as it had in 1991.

Last year, CGI bought three companies. In April, it purchased London Software Systems Specialists Ltd., which specializes in systems for industrial distribution. This was followed by the purchase of Interprogram GmbH, with 1991 revenue of more than DM36 million ($6.4 million). Interprogram distributes U.K.-based Synon's AS/400 CASE tool. With the arrival of CGI's PACBASE, CGI Interprogram will no longer distribute Synon's product, but will continue its support services, says Bernaudin. In October, CGI bought Decision International SA, a small French company with 1990 revenue of Fr120 million ($21.3 million) that specializes in UNIX-based industrial systems for small businesses.

—Marsha W. Johnston

IS Revenue $313.4 Million

RANK EUROPE 21 EUROPE

AMSTRAD PLC

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The glory days are becoming an ever more distant memory for Amstrad PLC's once high-flying and high-pro-

file personal computers business. For the second year in a row, total corporate revenue declined—down 25% in 1991 to $701.6 million (£398 million)—while net earnings melted into a $35.1 million loss (£19.9 million). With intensive price competition from Asian PC makers proving too tough to tackle, Amstrad chairman Alan Sugar is putting more muscle into the company's core business, inexpensive audio and video equipment such as VCRs and satellite dishes. Amstrad's IS revenues were down almost 40% to $313.4 million (£177.7 million) in 1991.

Amstrad's PC business has lost a significant share of the market over the past three years, dropping from second to fifth place in the United Kingdom, according to Dataquest Inc. of San Jose. Direct marketers like Dell Computer Corp. and Gateway 2000 Inc. are scoring points against Amstrad throughout the market, as are a flying wedge of Asian clone makers and a squad of locals operating out of garages. In response, Amstrad launched three Intel i486-based machines aimed at the business market—the 6486sx, the ES8486 series and the LP8486—at the Hannover, Germany, CeBit fair in March. The high-end machines may not be enough to prevent further erosion of its business, though.

Further clouding Amstrad's prospects is a feud with its largest distributor, P&P of Redditch, England. Last year Amstrad claimed that P&P failed to properly promote the equipment, while the distributor insisted that the vendor wasn't offering competitive products. Shipments were halted, though an Amstrad spokesperson says discussions continue.

Sugar insists that the PC market is bouncing back after three years in the doldrums, but Amstrad's recent performance does not suggest it is going to return to its winning ways anytime soon.—*Jon Kaye*

April 29, 1992 was a red letter day at Reuters Holdings PLC. The on-line information services and securities-trading systems company finally launched its long-delayed foreign exchange brokerage system. Dealing 2000-2, which runs on IBM-compatible PCs sourced from Intel Corp., is expected eventually to revolutionize trading in the $700-billion-per-day worldwide currency markets by automatically matching buy-and-sell orders of hundreds of banks and investment banks. The system will supplement and eventually replace many of Reuters's 116,000 foreign exchange terminals, currently a mix of dumb terminals and PCs connected to Reuters via telephone lines. Customer reaction to Dealing 2000-2 has been good, which is a relief to company officials. Software development hitches and legal hassles held up introductions of Dealing 2000-2 and the similar futures market system, Globex, which will be launched this summer. These delays have cast a shadow over the company's prospects for more than three years.

Nonetheless, last year wasn't all bad. Net earnings rose 10% in 1991 to $404.6 million (£229.6 million), while total corporate revenue was up 7.1%. DATAMATION estimates Reuters's IS revenue increased 7.5% to $284.5 million (£161.3 million), derived from a percentage of selling access to the company's real-time information and price services, from historical databases, and from sales of transaction software and trading room systems, which are sourced from Digital Equipment Corp., Hewlett-Packard Co., IBM and Sun Microsystems Inc. Up until about two years ago, Reuters manufactured its own terminals, but the company now resells Intel PCs or installs its software on compatibles supplied by customers. Reuters still makes its own data communications switches and keyboards. The company's original business of supplying information to newspapers and magazines has shrunk to about 6% of its revenue.

Reuters also introduced several other new products in 1991, mainly software enhancements to its existing offerings. The firm needs the new products in its stable because its present system for currency and securities traders has essentially saturated the market, according to analysts.

The new chief executive officer, Peter Job, faces other significant challenges. First among them is filling the gap left by the retirement last year of Glen Renfrew, Reuters's former chief executive officer and the key figure in the company's dramatic growth over the past 10 years. Furthermore, a reorganization of the company into five geographical regions late in the year has yet to bear fruit. And on the horizon are even bigger challenges. Ironically, the banks that are Reuters's biggest customers have developed two foreign exchange trading systems, called Electronic Broking Service and Minex, that they plan to launch next year. Those two systems will be in direct competition with Reuters's offerings.

—*Janet Lewis*

Thanks to BSO/Origin Technology in Business's unconventional "cell structure" organization, the

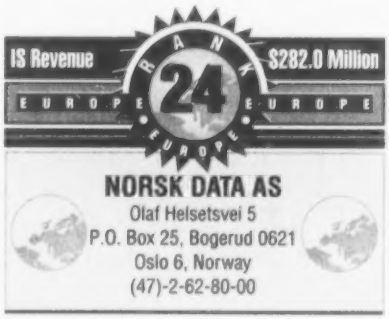
Netherlands's largest systems integrator and technical consultancy has launched a new and successful wave of Dutch colonization. Known outside the country as Origin Technology in Business, 15-year-old BSO has planted its decentralized operating cells or "settlements" in 14 countries throughout Europe, Asia and the Americas. Their growth fueled a 31.7% increase in revenue last year, up to $283.4 million (G530 million).

Each BSO settlement is an independent profit center with a staff of about 50 consultants. As soon as the employee count exceeds this figure, explains marketing and sales vice president Johannes Vunderink, a portion of the staff is "hived off," and a new colony, with its own geographic territory or market niche, is formed. "Our strategy goes back to human nature," says Vunderink. "We believe an ideal human tribe would consist of 50 to 70 people. In this size group, everyone knows each other, and natural leaders emerge."

It may sound to outsiders like a high-tech hodgepodge of the movies "Quest for Fire" and "Invasion of the Body Snatchers," but Vunderink claims BSO's organizational philosophy is designed expressly to manage accelerated international growth. And that's exactly what the company has been experimenting with for the past two years. In 1989, BSO had offices in only three countries: Germany, the Netherlands and Switzerland. Today its far-flung empire extends beyond Europe to Brazil, India, Singapore and the United States.

While BSO's revenue has grown, earnings lag behind. The company's employee-intensive business requires recruiting more worker bees to populate the new hives as new contracts come pouring in. Consequently, in 1991, the company found itself swarming with 850 new members for a total population of 3,700—a 34% increase over 1990 levels and a 200% gain over 1989. All that international recruiting consumed expensive—and unbillable—man-hours. Although productivity ratios for consultancies and integrators are often anemic, BSO's paltry revenue per employee of $85,000 dips dangerously low.

Poor productivity was not BSO's only problem last year. International expansion also has cut deeply into profits. Despite its overall revenue growth, BSO's net earnings declined 60.9% to a feeble $4.5 million (G8.4 million) in 1991. Start-up costs for large international contracts, such as a long-term technical support pact with AS/400 application provider Software 2000 Inc. and a recent $60 million facilities management agreement that the firm's Brazilian operation recently signed with Shell Corp., promise to hold down earnings for at least another year.—*Don Marks*



Norsk Data AS's financial tailspin accelerated last year. Once a highly successful maker and marketer of minicomputers throughout Europe, Norsk Data's fortunes have been declining for years. Despite a strong position in Scandinavia when the company was at its peak, it was much too small to fight larger competition and the trend among customers away from proprietary to open systems. As a result, revenue plummeted 26%, to $282 million (NKr1.813 billion) and losses increased, to $126 million (NKr810 million). Since 1988, Norsk has lost NKr2.3 billion.

The group's largest operating losses were produced by ND Comtec, which sells a proprietary system for newspaper publishing, and by Norsk Data's German subsidiary. Collectively, they lost NKr340 million ($53 million). Norsk is folding Comtec after failing to find a buyer—a deal to sell it to Britain's QED Technology Ltd., part of the Maxwell group, was halted after the death of Robert Maxwell. Meanwhile, the Germany subsidiary was drastically downsized.

Most of Norsk Data's loss was due to the cost of a major reorganization last autumn. The estimated NKr665 million ($103 million) reorganization converted the company from a computer manufacturer to a distributor and services group, comprising three independent subsidiaries. Managing director Erik Engebretsen's strategy appears to be to raise capital by selling shares in the spun-off units and by bringing in strong partners that can strengthen and expand the business.

A first step in the strategy was to sell 80% of the shares in ND Partner Systemleverandr AS, which develops and sells IT solutions to private business and the public sector, to the Norwegian subsidiary of Siemens Nixdorf Informationssysteme AG. The other spun-off subsidiaries are ND DataShop AS, a distributor of standard computer products and Formula OpenSoft, which sells its own administrative software for finance, inventory and orders. Reportedly, the three subsidiaries showed a profit after the first three months as independent companies.

Another step in the reorganization strategy was massive layoffs—800 positions were eliminated in 1991, and another 500 positions will be eliminated this year. Total employment this year is expected to be around 1,300, or less than half of the staff level of early 1990.

This year is decisive for Norsk Data. The company cannot afford any additional setbacks and must strengthen its balance sheet, say analysts, who concur that the drastic reorganization was the only way the company could survive. Although Engebretsen succeeded in reducing

debt and selling assets to trim the balance sheet by NKr1 billion ($156 million) to NKr1.7 billion (almost $266 million), there is hardly enough equity left after the restructuring charges to support the debt.

—Weje Sandén

Considered by some observers to be the Compaq Computer Corp. of the Netherlands, Dutch PC maker Tulip Computers International BV has pursued an upscale strategy that so far has failed to blossom outside of Holland. Founded in 1979, this R&D-minded, 670-employee company manufactures and sells its own line of Intel-based, IBM-compatible PCs—including notebooks, laptops, 286 and 386 desktops and tower-style 486 servers—at prices slightly below IBM's.

The trouble is: despite Tulip's continued investment in new technologies, and its steady development of a pan-European service and support network, big corporate buyers aren't taking notice.

Tulip's 1991 revenues were essentially flat at $215.5 million (G403 million). Net earnings waned, down 13.9% to a painfully low $8.7 million (G16.3 million). Jonathan Sheldrake, senior research analyst with International Data Corp. in London, attributes this dismal financial performance to the price-competitive European PC market, for which, he estimates, overall revenue declined by nearly 15% in 1991. And, he adds, Tulip incurred high expenses in an aggressive effort to expand distribution channels throughout Europe.

According to Sheldrake, Tulip shipped 116,618 units last year for a 1.3% share of the European PC market, but the lion's share of those shipments were sold inside the Netherlands, where Tulip's market share is second only to IBM's. Elsewhere, the company has struggled just to make its presence known.

Part of the problem rests with Tulip's upscale strategy. As European PC buyers gradually succumb to low-cost clones, Tulip has been forced to peddle its high-caliber wares to discriminating buyers. Escalating labor costs in the Netherlands prohibit the company from indulging in cutthroat price competition. Yet corporate customers willing to pay a price for quality usually expect the bedrock stability of a world-class vendor in return.

The threat of a takeover looms large in Tulip's future. In early 1992 the company sold Compudata BV, its successful Benelux distribution and marketing arm, to Japanese printer and peripherals company Star Micronics. John Scholes, president of Regent Associates International, a London financial analysis firm, believes that Tulip's brand recognition and Dutch distribution channels could prove palatable to any of several Taiwanese concerns seeking entry to the European market.

But avenues for continued survival do remain. Tulip could, for example, push its vigorous research and development unit further into the design of high-margin niche technologies, such as the secure desktop system with data-encrypting disk drives that it introduced in early 1992. *—Donald R. Marks*

The European 25

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